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BAKER BOTTS L.L.P.
PATENT DEPARTMENT
98 SAN JACINTO BLVD., SUITE 1500
AUSTIN, TX 78701-4039

EXAMINER

KIM, CHONG HWA

ART UNIT PAPER NUMBER

3682

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/616,018

Applicant(s)

ALBERT ET AL.

Examiner

Chong H. Kim

Art Unit

3682

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 18-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15, 16 and 18-22 is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-14 is/are rejected.
- 7) ☐ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/21/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

The Examiner acknowledges the Applicant's Amendment filed Oct 21, 2004 in response to the Office action made on Jul 21, 2004.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites the limitation "the channels" in line 3. There is insufficient antecedent basis for this limitation in the claim. Claim 1 recites "at least one channel" not plurality of channels.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this

Art Unit: 3682

subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Farshi et al., U.S. Patent 6,396,692 B1.

Farshi et al. shows, in Figs. 1-8, a plastic control plate comprising;

at least one channel 32 running through the plastic control plate 20 for carrying a cooling medium;

a heat conducting metal body plate 36 at least partially integrated in the plastic control plate directly adjacent to the channel;

wherein the heat conduction body is an aluminum plate (column 5, line 20);

wherein the heat conduction body is arranged directly adjacent and in contact with the channels whereby a cooling medium running through the channels flows against the body; and

wherein the heat conduction body is designed in the form of a U, wherein the inner sides of the U form wall areas of the channel.

5. Claims 1, 3-5, 7, 8, and 11-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Collins et al., U.S. Patent 5,276,584.

Collins et al. shows, in Fig. 6, a plastic control plate comprising;

at least one channel 30 running through the plastic control plate 16 for carrying a cooling medium;

a heat conducting metal body plate 18 at least partially integrated in the plastic control plate directly adjacent to the channel;

Art Unit: 3682

a substrate 20 carrying electronic components of the control electronics system arranged directly on the upper surface of the heat conduction body;

wherein the heat conduction body is arranged directly adjacent and in contact with the channels whereby a cooling medium running through the channels flows against the body;

wherein a flat area of the heat conduction body is designed as a wall area of the channel;

wherein the heat conduction body is designed in the form of a U, wherein the inner sides of the U form wall areas of the channel; and

wherein the control electronics system is electrically contacted via a flexible circuit board
32.

(note: the gearbox limitation has not been given patentable weight since it is an intended use apparatus)

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Collins et al. in view of Farshi et al.

Collins et al. shows, as discussed above in the rejection of claims 1 and 7, the plastic control plate with the control electronics system comprising the heat conduction body, but fails to show that the body is made of aluminum.

Art Unit: 3682

Farshi teaches, in column 5, line 17-23, a heat conduction body 36 can be made with aluminum.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the heat conducting material of Collins et al. with the aluminum heat conduction body as taught by Farshi in order to provide a more effective heat sink material so that the electronic system is prevented from being overheated.

Furthermore, it would have been obvious to make the heat conduction body of Collin et al. with aluminum material, since such a modification would have involved a mere selection of good heat conducting material in a heat exchange device. A selection of known material based on its suitability for the intended use is generally recognized as being within the level of ordinary skill in the art. *In re Leshin*, 125 USPQ 416.

8. Claims 1-4, 7, 8, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spiess et al., DE 197 15 592 A1 in view of Farshi et al., U.S. Patent 6,396,692 B1.

Spiess et al. shows, in Figs. 1-9, a plastic plate and a gearbox control electronics system, comprising;

at least one channel 5 which runs through the plastic control plate and is used for carrying a cooling medium;

a heat conduction body 8 which is at least partly integrated in the plastic control plate and is arranged directly adjacent to the channel;

wherein the heat conduction body is designed in such a way that the cooling medium flows against it;

Art Unit: 3682

wherein a flat area of the heat conduction body is designed as a wall area of the channel;
wherein the gearbox control electronics system is arranged directly on the upper surface
of the heat conduction body; and

wherein the gearbox control electronics system is electrically contacted via a flexible
electrical circuit board 12;

but fails to show the body being a metal (aluminum) plate.

Farshi teaches, in column 5, line 17-23, a heat conduction body 36 can be made with
aluminum.

It would have been obvious to a person of ordinary skill in the art at the time the
invention was made to modify the heat conducting material of Spiess with the aluminum heat
conduction body as taught by Farshi in order to provide a more effective heat sink material so
that the electronic system is prevented from being overheated.

Furthermore, it would have been obvious to make the heat conduction body of Spiess et
al. with aluminum material, since such a modification would have involved a mere selection of
good heat conducting material in a heat exchange device. A selection of known material based
on its suitability for the intended use is generally recognized as being within the level of ordinary
skill in the art. *In re Leshin*, 125 USPQ 416.

9. Claims 1, 3, 4, 7, 8, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable
over Spiess et al., DE 197 15 592 A1 in view of Collins et al.

Spiess et al. shows, in Figs. 1-9, a plastic plate and a gearbox control electronics system,
comprising;

Art Unit: 3682.

at least one channel 5 which runs through the plastic control plate and is used for carrying a cooling medium;

a heat conduction body 8 which is at least partly integrated in the plastic control plate and is arranged directly adjacent to the channel;

wherein the heat conduction body is designed in such a way that the cooling medium flows against it;

wherein a flat area of the heat conduction body is designed as a wall area of the channel;

wherein the gearbox control electronics system is arranged directly on the upper surface of the heat conduction body; and

wherein the gearbox control electronics system is electrically contacted via a flexible electrical circuit board 12;

but fails to show the body being a metal plate.

Collins et al. teaches, in Fig. 6, a heat conduction body 18 made of metal plate.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the heat conducting material of Spiess with the metal heat conduction body as taught by Collins et al. in order to provide a more effective heat sink material so that the electronic system is prevented from being overheated.

Furthermore, it would have been obvious to make the heat conduction body of Spiess et al. with a metallic material, since such a modification would have involved a mere selection of good heat conducting material in a heat exchange device. A selection of known material based on its suitability for the intended use is generally recognized as being within the level of ordinary skill in the art. *In re Leshin*, 125 USPQ 416.

Art Unit: 3682

10. Claims 1, 6, 7, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loibl et al., U.S. Patent 6,160,708 in view of Farshi et al., U.S. Patent 6,396,692 B1.

Loibl et al. shows, in Figs. 1-4, a plastic plate 11 and a gearbox control electronics system, comprising;

a heat conducting metal body plate 10 at least partially integrated in the plastic control plate directly adjacent to the channel;

a substrate 23 carrying electronic components of the control electronics system arranged directly on the upper surface of the heat conduction body;

wherein the heat conduction body is designed in such a way that the cooling medium flows against it;

wherein the upper surface of the plastic control plate is flush with the upper surface of the heat conduction body;

but fails show at least one channel which runs through the plastic control plate and is used for carrying a cooling medium;

Farshi shows, in Fig. 3, a heat conduction body 36 that is designed in the form of a U (the U-shaped halves) wherein the inner sides of the U form wall areas of the channel 32 which runs through the plastic control plate and is used for carrying a cooling medium.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the heat sink of Loibl et al with the cooling medium carrying channel form in the control plate with the conduction body as taught by Farshi et al. in order to provide a more effective heat dissipating system so that the electronic system is prevented from being overheated.

Art Unit: 3682

11. Claims 1, 6, 7, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loibl et al., U.S. Patent 6,160,708 in view of Collins et al.

Loibl et al. shows, in Figs. 1-4, a plastic plate 11 and a gearbox control electronics system, comprising;

a heat conducting metal body plate 10 at least partially integrated in the plastic control plate directly adjacent to the channel;

a substrate 23 carrying electronic components of the control electronics system arranged directly on the upper surface of the heat conduction body;

wherein the heat conduction body is designed in such a way that the cooling medium flows against it;

wherein the upper surface of the plastic control plate is flush with the upper surface of the heat conduction body;

but fails show at least one channel which runs through the plastic control plate and is used for carrying a cooling medium;

Collins et al. shows, in Fig. 6, a heat conduction body 18 that is designed in the form of a U (the U-shaped halves) wherein the inner sides of the U form wall areas of the channel 32 which runs through the plastic control plate and is used for carrying a cooling medium.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the heat sink of Loibl et al with the cooling medium carrying channel form in the control plate with the conduction body as taught by Collins et al. in order to provide a more effective heat dissipating system so that the electronic system is prevented from being overheated.

Allowable Subject Matter

12. Claims 15, 16, and 18-22 are allowed.
13. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

14. Applicant's arguments with respect to the previous 35 USC 102 and 103 rejections have been considered but are moot in view of the new ground(s) of rejection.
15. In response to the applicant's argument that Farshi's invention relies on convective system rather than conductive system, it is the Examiner's view that Farshi teaches a metal body that is clearly a heat conducting material. There is no limitation in any claims concerning the present invention being conductive system. Rather, the claims recite a heat conductive metal body wherein at least one cooling medium carrying channel is adjacent thereto. Perhaps the specification in the present invention contemplates the conductive system in the plastic control plate arrangement. However, it is noted that the features upon which applicant relies are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Art Unit: 3682

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

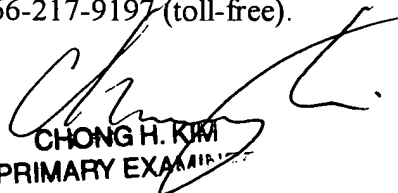
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chong H. Kim whose telephone number is (703) 305-0922. The examiner can normally be reached on Tuesday - Friday; 8:00 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Bucci can be reached on (703) 308-3668. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

chk
January 7, 2005


CHONG H. KIM
PRIMARY EXAMINER